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Gallo, Michael
Jia, Xiao-Chi

<120> Human Monoclonal Antibodies to Epidermal
Growth Factor Receptor

<130> Cell 4.20 CIP2

<140> 09/187,693
<141> 1998-11-05

<150> 09/162,280
<151> 1998-09-29

<150> 08/851,362
<151> 1997-05-05

<160> 75

<170> FastSEQ for Windows Version 4.0

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<211> 22
<212> DNA
<213> human

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caggtgcagc tggaggcagtc gg

22

<210> 2
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<400> 2
gctgagggag tagagtcctg agga

24

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<211> 294
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<213> human

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gggaagggcc tggactgcat tgggtacatc tattacagtg ggagcaccta ctacaacccg
tccctcaaga gtcgagttac catatcgta gacacgtcta agaatcgat tttcctgtaa
ctgacctctg tgactgccgc ggacacggcc gtgtattact gtgcgagatc tacggtgta
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240
294

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<212> DNA
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<400> 4

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ccagggaaag	cccctaaggt	cctgatccac	gatgcatcca	atttggaaac	agggggccca	120
tcaaggttca	gtggaagtgg	atctgggaca	gattttactt	tcaccatcag	cggcctgcag	180
cctgaagaca	ttgcaacata	ttattgtcaa	cagtatgaaa	gtctcccact	cactttcgac	240
ggagggacca	aggtggagat	caaa				264

<210> 5

<211> 291
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<213> human

<400> 5

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gggaagggcc	tggagtggat	tgggtccatc	tattacagtg	ggaacacctt	ctacaacccg	120
tccctcaaga	gtcgagttac	catactacta	gacacgtcta	agaaccagtt	ctccctgaag	180
ctgagttctg	tgactgcccgc	ggacacggcc	gtgtgttact	gtgcgagaaa	tatagtgact	240
acgggtgctt	ttgatatatctg	gggccaagggg	acaatggtca	ccgtctcttc	a	291

<210> 6

<211> 264
<212> DNA
<213> human

<400> 6

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ttaaggttca	gtggaagtgg	atctgggaca	gattttactt	tcaccatcag	cagcctgcag	180
cctgaagata	ttgcaacata	ttactgtcaa	cagtatgatc	atctcccgt	cactttcgac	240
ggcgggacca	aggtggcgat	caaa				264

<210> 7

<211> 288
<212> DNA
<213> human

<400> 7

gtctctggtg	gctccatcag	cagtggtgat	tactactgga	cctggatccg	ccagcaccca	60
gggaagggcc	tggagtggat	tgggtacatc	tattacagtg	ggaacaccta	ctacaacccg	120
tccctcaaga	gtcgagtttc	catgtcaata	gacacgtctg	agaaccagtt	ctccctgaag	180
ctgagctctg	tgactgcccgc	ggacacggcc	gtgttattact	gtgcgagaaa	accagtgact	240
gggggggagg	actactgggg	ccagggacc	ctggtcaccg	ttcctca		288

<210> 8

<211> 262
<212> DNA
<213> human

<400> 8

accatcaactt	gccagggcgag	tcaggacatt	agtaactatt	taaattggta	tcagcagaaaa	60
ccagggaaag	ccctaagctc	ctgatctacg	atgcttccaa	tttggaaaca	ggggtcccat	120
caaggttcag	tggagtggat	ctgggacaga	ttttactttc	accatcagca	gcctgcagcc	180
tgaagatgtt	ggaacatatg	tctgtcaaca	gtatgagagt	ctccctgtcg	gttttggcca	240
ggggaccaaa	ctggagatca	aa				262

<210> 9
 <211> 291
 <212> DNA
 <213> human

<220>
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 <222> (1)...(291)
 <223> n = A,T,C or G

<400> 9
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 gggaaaggccc tggagtggat tgggtacatc tattacagtg ggagcaccta ctacaacccg 120
 tccctcaaga gtcgagttac catgtcaata gaccgtctt agaaccagtt ctccctgaaa 180
 ctgatctctg tgactgcccgc ggacacggcc gtttattact gtgcgacntc ccttactat 240
 ggccccggta tggacgtctg gggccaagg accacggtca ccgtctcctc a 291

<210> 10
 <211> 264
 <212> DNA
 <213> human

<220>
 <221> misc_feature
 <222> (1)...(264)
 <223> n = A,T,C or G

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 tcaaggttca gtggaaagtgg atctgggaca gattttactt tcaccatcaa cagcctgcag 180
 cctgaagata ttgcgacata ttattgtcaa cactatgatc atctccctgt gacggtccgc 240
 caagggacca aggtggaant caaa 264

<210> 11
 <211> 291
 <212> DNA
 <213> human

<400> 11
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 gggaaaggccc tggagtggat tgggcacatc tattacagtg ggagcaccta ctacatcccg 120
 tccctcaaga gtcgaactac catatcgatc gacacgtctt agaaccagtt ctccctgaa 180
 ctgaactctg tgactgcccgc ggacacggcc gtgtattact gtgcgagagg gacagtaact 240
 acgtactactt tgactactg gggccaggaa accctggta ccgtctcctc a 291

<210> 12
 <211> 270
 <212> DNA
 <213> human

<400> 12
 accatcaactt gcccggcaag tcagagcatt agcagctatt taaattggta tcagcagaaa 60
 ccagggaaag cccctaaact cctgatctat gctgcaccca gtttgcggaaag tgggggtcccc 120
 tcaaggttca gtggcagtgg atctgggaca gatttcactc tcaccatcg cagtcgtcaa 180
 cctgaagatt ttgcacttta ctactgtcaa cagggttaca gaaccctcc ggagtgcagt 240

tttggccagg ggaccaagct ggagatcaa 270
 <210> 13
 <211> 291
 <212> DNA
 <213> human

<400> 13
 gtctctggtg gctccgtcag cagtggtgat tactactgga gctggatccg gcagccccca 60
 gggaaaggac tggagtggat tggacatctc tattacagtg ggaacaccaa ctacaacccc 120
 tccctcaaga gtcgagtcac catatcatta gacacgtcca agaaccagt ctccctgaag 180
 ctgagctctg tgaccgctgc ggacacggcc gtgtattact gtgcgagaga tttttgact 240
 ggttccttct ttgactactg gggccaggga accctggtca ccgtctcctc a 291

<210> 14
 <211> 264
 <212> DNA
 <213> human

<400> 14
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 ccagggaaag cccctaagct cctgatcaac gatgcatccg atttggaaac aggggtccca 120
 tcaaggatca gtggaagtgg atctgggaca gattttactt tcaccatcag caacctgcag 180
 cctgaagata ttgcaacata ttactgtcaa caatatgata gtctcccgt cactttcggc 240
 ggagggacca aggtggagat caga 264

<210> 15
 <211> 288
 <212> DNA
 <213> human

<400> 15
 gtctctggtg gctccgtcta cagtggtgat tactactgga gctggatccg gcagccccca 60
 gggaaaggac tggagtggat tgggtatatac tattacagtg ggagcaccaa ttacaatccc 120
 tccctcaaga gtcgagtcac catatcagta gacacgtcca agaaccagt ctccctgaag 180
 ctgagctctg tgaccgctgc ggacacggcc gtgtattact gtgcgagaga ctccatactg 240
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a
 cont

<210> 16
 <211> 264
 <212> DNA
 <213> human

<220>
 <221> misc_feature
 <222> (1)...(264)
 <223> n = A,T,C or G

<400> 16
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 ccagggaaag cccctaaast cctgatctcc gatgcatcca atttagaaac aggggtccca 120
 tcgaggtca gtggaagtgg atctgggaca gantntactt tcaccatcag cagcctgcag 180
 cctgaagata ttgcnacata tcactgtcna cagtatnata gtctcccgt cactttcggc 240
 ggagggacca aggttagagat caaa 264

<210> 17
 <211> 288

<212> DNA
<213> human

<400> 17
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ggaaaggac tggagtggat tggacacatc tattacagtg ggaacaccaa ttataacccc
tccctcaaga gtcgactcac catatcaatt gacacgtcca agactcagg ctccctgaag
ctgagttctg tgaccgctgc ggacacggcc atttattact gtgtgcgaga tcgagtgact
ggtgctttg atatctgggg ccaaggacata atggtcaccg tctcttca 60
120
180
240
288

<210> 18
<211> 264
<212> DNA
<213> human

<400> 18
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ccagggaaag cccctaaact cctgatctac gatgcaccca atttggaaac aggggtccca
tcaaggttca gtggaaagtgg atctgggaca gatttactt tcaccatcag cagcctgcag
cctgaagata ttgcaacata tttctgtcaa cactttgatc atctcccgct cgcttcggc
ggagggacca aggtggagat caaa 60
120
180
240
264

<210> 19
<211> 480
<212> DNA
<213> human

<220>
<221> misc_feature
<222> (1)...(480)
<223> n = A,T,C or G

<400> 19
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agntntggca tgcactgggt ccggcaggct ccaggcaagg ggctggagtg ggtggcagtt
atatggatg atgaaagtaa taaatactat gcagactccg tgaaggggccg attcaccatc
tccagagaca attccaagaa cacgctgtat ctgcaaatga acagactgag agccgaggac
acggctgtgt attactgtgc gagattttg gagtggttac cctttgacta ctggggccag
ggaaccctgg tcaccgtctn ctcagactcc accaaggggcc catcggtctt cnccctggcg
ccctgcttcc aggagcaccc tcnganagca canangggcc ctgggactgn ctgnataaag
gactncttc cctcnaacccn ggtgaccntn tcntggaaa ctcagngcnc ntctnnatna 60
120
180
240
300
360
420
480

A
<210> 20
<211> 490
<212> DNA
<213> human

<220>
<221> misc_feature
<222> (1)...(490)
<223> n = A,T,C or G

<400> 20
cggaaccttt nggttcgcnc ctttgagn cagaccanc atcacttgc gggcgagtca
gggcattagc aatttttag cctggttca gcagaaacca gggatagccc ctaagtccct
gatctatgtc gcatccactt tgcaaagtgg ggtcccatca aagttcaccg gcagtgata
tgggacagat ttcaactctca ccatcagcag cctgcagcct gaagactttt caacttatta 60
120
180
240

ttgtcaaca tataatgtt acccattcac tttcgccct gggaccaaag tggatataa 300
 acgaactgtg gctgcaccat ctgtcttcat ctccccca tctgatgagc aagttaaat 360
 ctggaaactgc ctctgttg tgcctgctga ataacttcta tcccagagag gccaaagtac 420
 agtggaaagggt ggataacgcc ncnnttggcg gnntccttc nctcnccnt cctcnncnn 480
 cctctcncna 490

<210> 21
 <211> 449
 <212> DNA
 <213> human

<220>
 <221> misc_feature
 <222> (1)...(449)
 <223> n = A,T,C or G

<400> 21
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 gatacaact gggcgacaca ggcacttggca caaggcctt gttggatggg atggatgaac 120
 cctaacagtg gtaacacagg ctatgcacag aagttccagg gcagagtcac catgaccagg 180
 aacacctcca taagcacagc ctacatggag ctgagcagcc tgagatctga ggacacggcc 240
 gtgttattact gtgcgagagg aggcccstat agcagttggct ggaccttctt tgactactgg 300
 ggccaggaa ccctggtcac cgtctcctca gccctncacc aaggcccatt cggcttccc 360
 cctggcgccc tgctccagga gcacctccga gagcacagcg nncccttggg ctgcctggnn 420
 caaggactct ttccccnaac cccggntga 449

<210> 22
 <211> 460
 <212> DNA
 <213> human

<220>
 <221> misc_feature
 <222> (1)...(460)
 <223> n = A,T,C or G

<400> 22
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 cagcgtgtt tatacanctc caacaataag aactgcttag ctggtagcca gcagaaacca 120
 ggacagccctc ctaagctgtc catttactgg acatctaccc gggaatccgg ggtccctgcc 180
 cgattcagtg gcagcgggtc tgggacagat ttcactctca ccatcagcag cctgcaggct 240
 gaagatgtgg cagtttatta ctgtcagcaa tattatagta ctccactcac tttcggcgga 300
 gggaccatgg tggagatcaa gcgaactgtg gctgcaccat ctgtcttcat cttccgcaca 360
 tctgatgagc cngtntgaaa tctggactgt cctctgttg tggccctgc tgaataactt 420
 ctatcccaga gaggccaaag taccagtggaa aggtggataa 460

<210> 23
 <211> 465
 <212> DNA
 <213> human

<220>
 <221> misc_feature
 <222> (1)...(465)
 <223> n = A,T,C or G

<400> 23

cngcctgtta ggtccntgctg actctcctgt gcagcgtctg gattcatctt cagtagctat 60
 ggcatgcact gggccgcca ggctccaggc aaggggctgg agtgggtggc aattatatgg 120
 tatgatggaa gtaataaata ctatgcagac tccgtgaagg gccgattcac catctccaga 180
 gacaattcca agaacacgct gtatctgcaa atgaacagcc tgagagccga ggacacggct 240
 gtgtattact gtgcgagaga cggggggcca cggtggttc tcgcttctga ctactgggc 300
 cagggaaacc cggcaccgt ctccctcagcc tccaccaagg gcccatcggt cttccccctg 360
 gcgcctgct ccaggagcac ctttcgagag cacagcggcc ctgggctgccc tggttcaagg 420
 actactttcc ccgaaccggc gacgggttnc gttgaaactc atgac 465

<210> 24
 <211> 456
 <212> DNA
 <213> human

<220>
 <221> misc_feature
 <222> (1)...(456)
 <223> n = A,T,C or G

<400> 24

agtctccaga ctccctgggt gtgtctctgg gcgcgagggc caccatcaac tgcaagtcca 60
 gncagagtat ttatacagc tccaacaatc aaaaacttct tagttggta ccagcagaaa 120
 ccaggacagc ctccgaagtt gctcattac tggcatctt ttcgggaaatc cggggccct 180
 gaccgattca gtggcagcgg gtcgggaca gatttactc tcaccatcag cagcctgcag 240
 gctgaagatg tggcagtttta ttactgtcag cagtattata gtattccgtg cactttggc 300
 caggggacca agctggagat caaacgaact gtggctgcac catctgtctt catctcccg 360
 ccatctgtatg agcagttgaa atctgaaact gcctctgtt tgcctgtgtc gaataacttc 420
 tatccagaa aggccaaagt acatgaaggg ttcaaa 456

<210> 25
 <211> 532
 <212> DNA
 <213> human

<220>
 <221> misc_feature
 <222> (1)...(532)
 <223> n = A,T,C or G

<400> 25

a
 Cont.

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 agtarctatg gcatgcactg ggtccgcag gctccaggca aggggctgga gtgggtggca 120
 attatatggat atgatggaaatg tagcaaatac tatgcagact ccgtgaaggcc cggatccacc 180
 atctccagag acaattccaa gaacacgctg tatctgcaaa tgaacagccct gagagccgag 240
 gacacggctg tgtattactg tgcgagagac gggggccac ggtggttct cgcttctgac 300
 tactggggcc agggaaaccct ggtcaccgtc tcctcagccct ccaccaaggccc cccatcggtc 360
 ttccccctgg cggccctgctc caggagcacc ttccgagagc acagcggccc tgggtgcct 420
 ggtcaaggac tacttccccg aamcggtgac ggtgtcggtt aactcaggccg ctctgaccag 480
 nggcgtgcac aattcccaagc ngtcctnaag gttgaaatcg taangttca aa 532

<210> 26
 <211> 463
 <212> DNA
 <213> human

<220>
 <221> misc_feature

<222> (1)...(463)

<223> n = A,T,C or G

<400> 26

actcagtctc	cagactccct	ggctgtgtct	ctgggggaga	gggcccacca	caactgcaag	60
tccagccaga	gtgtttata	cggttccaag	aatcagaact	acttagctt	gtaccagcag	120
aaaccaggac	agcccttaa	gctgctcatt	tactgggcat	ctacccggga	atccggggtc	180
cctgaccgat	tcaggggcag	cggttctagg	acagattca	ctctcaccat	cagcagcctg	240
caggctgaag	atgtggcagt	ttacttctgt	caccaataatt	atagtaactcc	gtggacgttc	300
ggccaaggga	ccaaggtgga	aatcaaacga	actgtggctg	caccatctgt	tttcatcttc	360
ccgcccattc	atgagcagt	gaaatctgga	actgcctctg	ttgtgtgcct	gctgaataac	420
ttgtatccca	gaaagccaaag	gacacgaaag	gtcanaccna	ccc		463

<210> 27

<211> 417

<212> DNA

<213> human

<220>

<221> misc_feature

<222> (1)...(417)

<223> n = A,T,C or G

<400> 27

cgtgatccnc	ctggntggtc	cctgagactc	tcctgtgcag	cgtctggatt	catcttcant	60
aactattnca	tgcactgggt	ccgcccaggct	ccaggcaagg	ggctggagtg	ggtgccaaatt	120
atatggatg	atgaaagtag	caaatactat	gcagactccg	ngaaggcccg	attcaccatc	180
tccagagaca	attccaagaa	cacgctgtat	ctgcaaatga	acagcctgag	agccgaggac	240
acggctgatg	tattactgt	cgagagacgg	ttggggccacg	gtggcttctc	gcttctgact	300
actggngcnc	agggcaacnc	tgnctnaccg	tnttcctcan	ccctntacnc	aagggccncc	360
atnngtctt	ccccccctgg	nnnnccctgct	cnatgnnnca	ccctncgaca	ncnacan	417

<210> 28

<211> 453

<212> DNA

<213> human

A
|
cont. ·
<220>

<221> misc_feature

<222> (1)...(453)

<223> n = A,T,C or G

<400> 28

ttcgtggctg	tgtctcttgg	cgagaggnc	accatcaact	gcaagtccag	ccagagtatt	60
ttatacagct	ccaacaatca	aaacttctta	gcttggtacc	agcagaaaacc	aggacagcct	120
ccgaagttgc	tcatttactg	ggcatctatt	cggaatccg	gggtccctga	ccgattcagt	180
ggcagcgggt	ctgggacaga	tttcactctc	accatcagca	gcctgcaggg	tgaagatgtg	240
gcagtttatt	actgtcagca	gtattatagt	attccgtgca	cttttggcca	ggggacccaag	300
ctggagatca	aacgaactgt	ggctgaccca	tctgttca	tcttcccgcc	atctgatgag	360
ccaagntga	aaatctggaa	ctgcctctgt	tgtgtgcct	gcttgaataa	cttctatccc	420
agaganggcc	aaagtccngt	ggaaggtgga	tac			453

<210> 29

<211> 349

<212> DNA

<213> human

<220>
 <221> misc_feature
 <222> (1)...(349)
 <223> n = A,T,C or G

<400> 29
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 cccgnaggga agggactgga gtggattggg ttttctatt acagngggag cacaactac 120
 aaccctccc tnaagagtca tgcaccata tcagtagaca cgtccaagaa ccagttctac 180
 ntgaagctga gctntgtgac cgntgcggac acggncgnga ataactgngc nagagatagg 240
 ggagnagggn ntggcnntct actntgacta ctgaggccag ngaaccntgg ntcacagtaa 300
 tccntaagnc tnncaancaa angngnccca angnganacn tnnctncnc 349

<210> 30
 <211> 476
 <212> DNA
 <213> human

<220>
 <221> misc_feature
 <222> (1)...(476)
 <223> n = A,T,C or G

<400> 30
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 ttatacngct ccaagaatca gaactactta gcttggtacc agcagaaacc aggacagcct 120
 cctaagctgc tcatttactg ggcatctacc cggaaatccg gggtccctga ccgattcagg 180
 ggcagcgggt ctaggacaga tttcactctc accatcagca gcctgcaggc tgaagatgtg 240
 gcagttact tctgtcacca atattatagt actccgtgga cgttcggcca agggaccaag 300
 gtggaaatca aacgaactgt ggctgcacca tctgtcttca tcttcccgcc atctgatgag 360
 caccctgaaa ttctggaact gcctctgntg ngtgcctgct gaacnaactc tatccccaga 420
 ganggcccua aagtntcaag nnggnnaggc nngataacgc ctnttcnccn ncntnc 476

<210> 31
 <211> 471
 <212> DNA
 <213> human

<220>
 <221> misc_feature
 <222> (1)...(471)
 <223> n = A,T,C or G

<400> 31
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 gtttactact ggagctggat ccgccagcac ccagggaaagg gcctggagtg gattgggtac 120
 atctataaca gtgggagcac ctactacaac ccgtccctcc agagtcgagt taccatataca 180
 gtagacacgt ctaagaacca gtttccctg aagctgagct ctgtgactgc cgccgacacg 240
 gcccgttatt actgtgcggg tcagaaaatgg tcctactact actactacgg tatggacgtc 300
 tggggccaag ggaccacggc caccgtctcc ttagccctca ccaangggccc atcggtttc 360
 cccctggcgc cctgntctag gagcacctcc canagcacag acggatnctg ggcctgcctg 420
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<210> 32
 <211> 456
 <212> DNA
 <213> human

<220>
 <221> misc_feature
 <222> (1)...(456)
 <223> n = A,T,C or G

<400> 32
 aagccttng agaccntgcc cctcacctgc actgtctctg gtggctccat cagtaattac 60
 tactggagct ggatccggca gcccccaggg aagggactgg agtggattgg gtatatctat 120
 tacagtggga gcaccaacta caaccctcc ctcaagagtc gagtcaccat atcagtagac 180
 acgtccaaga accagttctc cctgaagctg agctctgtga ccgctgcggg cacggccgtg 240
 tattactgtg cgagagggcc cggggggagc tactactact acggtatggg cgtctgggc 300
 caagggacca cggtcaccgt ctccctcagcc tccaccaagg gcccattcggt cttcccccctg 360
 gcccctgtc ccaggagcac ctccgagagc acagcggccc tgggctgcct gggtaagga 420
 ctacttcccc gaaccgggtga cgggttcgn nggaac 456

<210> 33
 <211> 394
 <212> DNA
 <213> human

<400> 33
 ctgtctgcat ctgttaggaga cagagtcata atcacttgcc gggcaagtca aaacatcacc 60
 gaccatttaa attggtatca gcagatagca ggaaaagccc ctaggccccct gatatacact 120
 gcatccagg ttcaagggtgg ggtcccatca aggttcagtg gcagtggatc tgggacagat 180
 ttcactctca ccatcagcag tctgcaacct gaagattttt caacttacta ctgtcaacag 240
 agttacagta cccctgtgcag ttttggccag gggaccaagc tggagatcaa acgaactgtg 300
 gctgcaccat ctgtcttcat cttcccgcca tctgatgagc agttgaaatc tggaaactgcc 360
 tctgttgtgt gcctgctgaa taacttctat ccca 394

<210> 34
 <211> 310
 <212> DNA
 <213> human

<220>
 <221> misc_feature
 <222> (1)...(310)
 <223> n = A,T,C or G

1
 a
 Cont

<400> 34
 gtgaaggctt cctgcaaggc ttctggatac acttcagcg gttactatgc gcaactgggtg 60
 cgacaggccc ctggacaagg gcttgagtgg atgggatcga tccaccctaa cagtgggtggc 120
 anaaaacttg cacagaagtt tcagggcagg gtcaccatga ccagggacac gtccatcaac 180
 acagcctact tggagctgag caggctgaga tctgacgaca cggccgtgtt ttactgtgcg 240
 agagataaaa actacggtga ctacgtctt gactattggg gccaggaaac cctggtcacc 300
 gtctccctcag 310

<210> 35
 <211> 76
 <212> PRT
 <213> human

<400> 35
 Val Ser Gly Gly Ser Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile
 1 5 10 15
 Arg Gln His Pro Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr

20 25 30
Ser Gly Ser Thr Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile
35 40 45
Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val
50 55 60
Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg
65 70 75

<210> 36

<211> 76

<212> PRT

<213> human

<400> 36

Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser Asn Tyr Leu Asn Trp
1 5 10 15
Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Asp Ala
20 25 30
Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser
35 40 45
Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile
50 55 60
Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Asn Leu Pro
65 70 75

<210> 37

<211> 76

<212> PRT

<213> human

<400> 37

Thr Ile Thr Cys Arg Ala Ser Gln Ser Ile Ser Ser Tyr Leu Asn Trp
1 5 10 15
Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Ala Ala
20 25 30
Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser
35 40 45
Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe
50 55 60
Ala Thr Tyr Tyr Cys Gln Gln Ser Tyr Ser Thr Pro
65 70 75

a
cont.

<210> 38

<211> 76

<212> PRT

<213> human

<400> 38

Val Ser Gly Gly Ser Val Ser Ser Gly Ser Tyr Tyr Trp Ser Trp Ile
1 5 10 15
Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr
20 25 30
Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile
35 40 45
Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val
50 55 60
Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg

65

70

75

<210> 39

<211> 100

<212> PRT

<213> human

<400> 39

Val Ser Gly Gly Ser Ile Asn Ser Gly Asp Tyr Tyr Trp Ser Trp Ile
1 5 10 15
Arg Gln His Pro Gly Lys Gly Leu Asp Cys Ile Gly Tyr Ile Tyr Tyr
20 25 30
Ser Gly Ser Thr Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile
35 40 45
Ser Val Asp Thr Ser Lys Asn Gln Phe Phe Leu Lys Leu Thr Ser Val
50 55 60
Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg Ser Thr Val Val
65 70 75 80
Ala Ser Asn Pro Gly Trp Phe Asp Pro Trp Gly Gln Gly Thr Leu Val
85 90 95
Thr Val Ser Ser
100

<210> 40

<211> 105

<212> PRT

<213> human

<400> 40

Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Asn Asn Tyr Leu Asn Trp
1 5 10 15
Phe Gln Gln Lys Pro Gly Lys Ala Pro Lys Val Leu Ile His Asp Ala
20 25 30
Ser Asn Leu Glu Thr Gly Gly Pro Ser Arg Phe Ser Gly Ser Gly Ser
35 40 45
Gly Thr Asp Phe Thr Phe Thr Ile Ser Gly Leu Gln Pro Glu Asp Ile
50 55 60
Ala Thr Tyr Tyr Cys Gln Gln Tyr Glu Ser Leu Pro Leu Thr Phe Gly
65 70 75 80
Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val
85 90 95
Phe Ile Phe Pro Pro Ser Asp Glu Gln
100 105

<210> 41

<211> 97

<212> PRT

<213> human

<400> 41

Val Ser Gly Gly Ser Ile Asn Ser Gly Asp Tyr Tyr Trp Ser Trp Ile
1 5 10 15
Arg Gln His Pro Gly Lys Gly Leu Glu Trp Ile Gly Ser Ile Tyr Tyr
20 25 30
Ser Gly Asn Thr Phe Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile
35 40 45
Ser Leu Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val

A
Cont.

50 55 60
Thr Ala Ala Asp Thr Ala Val Cys Tyr Cys Ala Arg Asn Ile Val Thr
65 70 75 80
Thr Gly Ala Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr Val Ser
85 90 95
Ser

<210> 42
<211> 105
<212> PRT
<213> human

<400> 42
Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Thr Ile Tyr Leu Asn Trp
1 5 10 15
Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Asn Asp Ala
20 25 30
Ser Ser Leu Glu Thr Gly Val Pro Leu Arg Phe Ser Gly Ser Gly Ser
35 40 45
Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile
50 55 60
Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp His Leu Pro Leu Thr Phe Gly
65 70 75 80
Gly Gly Thr Lys Val Ala Ile Lys Arg Thr Val Ala Ala Pro Ser Val
85 90 95
Phe Ile Phe Pro Pro Ser Asp Glu Gln
100 105

<210> 43
<211> 96
<212> PRT
<213> human

<400> 43
Val Ser Gly Gly Ser Ile Ser Ser Gly Asp Tyr Tyr Trp Thr Trp Ile
1 5 10 15
Arg Gln His Pro Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr
20 25 30
Ser Gly Asn Thr Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Ser Met
35 40 45
Ser Ile Asp Thr Ser Glu Asn Gln Phe Ser Leu Lys Leu Ser Ser Val
50 55 60
Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg Lys Pro Val Thr
65 70 75 80
Gly Gly Glu Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
85 90 95

<210> 44
<211> 105
<212> PRT
<213> human

<400> 44
Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser Asn Tyr Leu Asn Trp
1 5 10 15
Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Asp Ala

20	25	30	
Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser			
35	40	45	
Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile			
50	55	60	
Val Gly Tyr Tyr Val Gln Gln Tyr Glu Ser Leu Pro Cys Gly Phe Gly			
65	70	75	80
Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val			
85	90	95	
Phe Ile Phe Pro Pro Ser Asp Glu Gln			
100	105		

<210> 45

<211> 97

<212> PRT

<213> human

<400> 45

Val Ser Gly Gly Ser Ile Asn Ser Gly Asp Phe Tyr Trp Ser Trp Ile			
1	5	10	15
Arg Gln His Pro Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr			
20	25	30	
Ser Gly Ser Thr Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Met			
35	40	45	
Ser Ile Asp Pro Ser Lys Asn Gln Phe Ser Leu Lys Leu Ile Ser Val			
50	55	60	
Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Thr Ser Leu Tyr Tyr			
65	70	75	80
Gly Gly Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser			
85	90	95	

Ser

<210> 46

<211> 105

<212> PRT

<213> human

a
Cont > <220>

<221> VARIANT

<222> (1)...(105)

<223> Xaa = Any Amino Acid

<400> 46

Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser Asn Asn Leu Asn Trp			
1	5	10	15
Tyr Gln Gln Lys Arg Gly Asn Ala Pro Lys Leu Leu Ile Tyr Asp Ala			
20	25	30	
Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser			
35	40	45	
Gly Thr Asp Phe Thr Phe Thr Ile Ser Asn Leu Gln Pro Glu Asp Ile			
50	55	60	
Ala Thr Tyr Tyr Cys Gln His Tyr Asp His Leu Pro Trp Thr Phe Gly			
65	70	75	80
Gln Gly Thr Lys Val Glu Xaa Lys Arg Thr Val Ala Ala Pro Ser Val			
85	90	95	
Phe Ile Phe Pro Pro Ser Asp Glu Gln			

100

105

<210> 47
<211> 97
<212> PRT
<213> human

<400> 47

Val	Ser	Gly	Gly	Ser	Ile	Asn	Asn	Gly	Asp	Tyr	Tyr	Trp	Ser	Trp	Ile
1		5				10							15		
Arg	Gln	His	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Ile	Gly	His	Ile	Tyr	Tyr
	20						25						30		
Ser	Gly	Ser	Thr	Tyr	Tyr	Ile	Pro	Ser	Leu	Lys	Ser	Arg	Thr	Thr	Ile
	35						40					45			
Ser	Val	Asp	Thr	Ser	Lys	Asn	Gln	Phe	Ser	Leu	Lys	Leu	Asn	Ser	Val
	50					55					60				
Thr	Ala	Ala	Asp	Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Gly	Thr	Val	Thr
65			70					75					80		
Thr	Tyr	Tyr	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser
			85					90					95		
Ser															

<210> 48
<211> 107
<212> PRT
<213> human

<400> 48

Thr	Ile	Thr	Cys	Arg	Ala	Ser	Gln	Ser	Ile	Ser	Ser	Tyr	Leu	Asn	Trp
1		5				10						15			
Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys	Leu	Leu	Ile	Tyr	Ala	Ala
	20						25					30			
Ser	Ser	Leu	Gln	Ser	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly	Ser		
	35					40					45				
Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro	Glu	Asp	Phe
	50					55					60				
Ala	Thr	Tyr	Tyr	Cys	Gln	Gln	Gly	Tyr	Arg	Thr	Pro	Pro	Glu	Cys	Ser
65					70				75				80		
Phe	Gly	Gln	Gly	Thr	Lys	Leu	Glu	Ile	Lys	Arg	Thr	Val	Ala	Ala	Pro
					85				90				95		
Ser	Val	Phe	Ile	Phe	Pro	Pro	Ser	Asp	Glu	Gln					
					100					105					

<210> 49
<211> 97
<212> PRT
<213> human

<400> 49

Val	Ser	Gly	Gly	Ser	Val	Ser	Ser	Gly	Asp	Tyr	Tyr	Trp	Ser	Trp	Ile
1		5				10						15			
Arg	Gln	Pro	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Ile	Gly	His	Leu	Tyr	Tyr
	20						25					30			
Ser	Gly	Asn	Thr	Asn	Tyr	Asn	Pro	Ser	Leu	Lys	Ser	Arg	Val	Thr	Ile
	35						40					45			
Ser	Leu	Asp	Thr	Ser	Lys	Asn	Gln	Phe	Ser	Leu	Lys	Leu	Ser	Ser	Val

50 55 60
Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg Asp Phe Leu Thr
65 70 75 80
Gly Ser Phe Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
85 90 95
Ser

<210> 50
<211> 105
<212> PRT
<213> human

<400> 50
Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser Asn Tyr Leu Asn Trp
1 5 10 15
Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Asn Asp Ala
20 25 30
Ser Asp Leu Glu Thr Gly Val Pro Ser Arg Ile Ser Gly Ser Gly Ser
35 40 45
Gly Thr Asp Phe Thr Phe Thr Ile Ser Asn Leu Gln Pro Glu Asp Ile
50 55 60
Ala Thr Tyr Tyr Cys Gln Gln Tyr Asp Ser Leu Pro Leu Thr Phe Gly
65 70 75 80
Gly Gly Thr Lys Val Glu Ile Arg Arg Thr Val Ala Ala Pro Ser Val
85 90 95
Phe Ile Phe Pro Pro Ser Asp Glu Gln
100 105

<210> 51
<211> 96
<212> PRT
<213> human

<400> 51
Val Ser Gly Gly Ser Val Tyr Ser Gly Asp Tyr Tyr Trp Ser Trp Ile
1 5 10 15
Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr
20 25 30
Ser Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile
35 40 45
Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val
50 55 60
Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg Asp Ser Ile Leu
65 70 75 80
Gly Ala Thr Asn Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
85 90 95

<210> 52
<211> 105
<212> PRT
<213> human

<220>
<221> VARIANT
<222> (1)...(105)
<223> Xaa = Any Amino Acid

<400> 52

Thr Ile Thr Cys Gln Ala Ser Gln Xaa Ile Ser Asn Tyr Leu Xaa Trp
1 5 10 15
Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Xaa Leu Ile Ser Asp Ala
20 25 30
Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser
35 40 45
Gly Thr Xaa Xaa Thr Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile
50 55 60
Ala Thr Tyr His Cys Xaa Gln Tyr Xaa Ser Leu Pro Leu Thr Phe Gly
65 70 75 80
Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val
85 90 95
Phe Ile Phe Pro Pro Ser Asp Glu Gln
100 105

<210> 53

<211> 95
<212> PRT
<213> human

<400> 53

Val Ser Gly Gly Ser Val Ser Ser Gly Asp Tyr Tyr Trp Thr Trp Ile
1 5 10 15
Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Ile Gly His Ile Tyr Tyr
20 25 30
Ser Gly Asn Thr Asn Tyr Asn Pro Ser Leu Lys Ser Arg Leu Thr Ile
35 40 45
Ser Ile Asp Thr Ser Lys Thr Gln Phe Ser Leu Lys Leu Ser Ser Val
50 55 60
Thr Ala Ala Asp Thr Ala Ile Tyr Tyr Cys Val Arg Asp Arg Val Thr
65 70 75 80
Gly Ala Phe Asp Ile Trp Gly Gln Gly Thr Met Val Thr Ser Ser
85 90 95

<210> 54

<211> 105
<212> PRT
<213> human

A
cont.
<400> 54

Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ser Asn Tyr Leu Asn Trp
1 5 10 15
Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile Tyr Asp Ala
20 25 30
Ser Asn Leu Glu Thr Gly Val Pro Ser Arg Phe Ser Gly Ser Gly Ser
35 40 45
Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile
50 55 60
Ala Thr Tyr Phe Cys Gln His Phe Asp His Leu Pro Leu Ala Phe Gly
65 70 75 80
Gly Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val
85 90 95
Phe Ile Phe Pro Pro Ser Asp Glu Gln
100 105

<210> 55
<211> 160
<212> PRT
<213> human

<220>
<221> VARIANT
<222> (1)...(160)
<223> Xaa = Any Amino Acid

<400> 55
Ala Ile Gln Pro Phe Arg Ser Met Pro Phe Ser Cys Xaa Ala Ser Gly
1 5 10 15
Phe Pro Phe Ser Xaa Xaa Gly Met His Trp Val Arg Gln Ala Pro Gly
20 25 30
Lys Gly Leu Glu Trp Val Ala Val Ile Trp Tyr Asp Gly Ser Asn Lys
35 40 45
Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn
50 55 60
Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Arg Leu Arg Ala Glu Asp
65 70 75 80
Thr Ala Val Tyr Tyr Cys Ala Arg Phe Leu Glu Trp Leu Pro Phe Asp
85 90 95
Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Xaa Ser Asp Ser Thr Lys
100 105 110
Gly Pro Ser Val Phe Xaa Leu Ala Pro Cys Phe Gln Glu His Pro Xaa
115 120 125
Xaa Ala Xaa Xaa Ala Pro Gly Thr Xaa Xaa Tyr Lys Asp Xaa Phe Pro
130 135 140
Ser Asn Xaa Val Thr Xaa Ser Trp Glu Thr Gln Xaa Xaa Ser Xaa Xaa
145 150 155 160

<210> 56
<211> 161
<212> PRT
<213> human

<220>
<221> VARIANT
<222> (1)...(161)
<223> Xaa = Any Amino Acid

<400> 56
Gly Thr Phe Xaa Phe Ala Pro Phe Gly Xaa Arg Pro Xaa Ile Thr Cys
1 5 10 15
Arg Ala Ser Gln Gly Ile Ser Asn Phe Leu Ala Trp Phe Gln Gln Lys
20 25 30
Pro Gly Ile Ala Pro Lys Ser Leu Ile Tyr Ala Ala Ser Thr Leu Gln
35 40 45
Ser Gly Val Pro Ser Lys Phe Thr Gly Ser Gly Tyr Gly Thr Asp Phe
50 55 60
Thr Leu Thr Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr
65 70 75 80
Cys Gln Gln Tyr Asn Val Tyr Pro Phe Thr Phe Gly Pro Gly Thr Lys
85 90 95
Val Asp Ile Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro
100 105 110

Pro Ser Asp Glu Pro Val Glu Ile Trp Asn Cys Leu Cys Cys Val Pro
115 120 125
Ala Glu Leu Leu Ser Gln Arg Gly Gln Ser Thr Val Glu Gly Gly Arg
130 135 140
Xaa Xaa Trp Arg Xaa Pro Phe Xaa Xaa Pro Ser Ser Xaa Xaa Leu Ser
145 150 155 160
Xaa

<210> 57
<211> 149
<212> PRT
<213> human

<220>
<221> VARIANT
<222> (1)...(149)
<223> Xaa = Any Amino Acid

<400> 57
Lys Pro Val Ala Ser Val Gln Val Ser Cys Lys Ala Ser Gly Tyr Thr
1 5 10 15
Phe Thr Ser Tyr Asp Ile Asn Trp Val Arg Gln Ala Thr Gly Gln Gly
20 25 30
Leu Glu Trp Met Gly Trp Met Asn Pro Asn Ser Gly Asn Thr Gly Tyr
35 40 45
Ala Gln Lys Phe Gln Gly Arg Val Thr Met Thr Arg Asn Thr Ser Ile
50 55 60
Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala
65 70 75 80
Val Tyr Tyr Cys Ala Arg Gly Gly Pro Tyr Ser Ser Gly Trp Thr Phe
85 90 95
Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Leu
100 105 110
His Gln Gly Pro Ile Gly Leu Pro Pro Gly Ala Leu Leu Gln Glu His
115 120 125
Leu Pro Glu His Xaa Xaa Pro Leu Gly Cys Leu Xaa Gln Gly Leu Phe
130 135 140
Pro Xaa Thr Pro Xaa
145

A
cont
<210> 58
<211> 151
<212> PRT
<213> human

<220>
<221> VARIANT
<222> (1)...(151)
<223> Xaa = Any Amino Acid

<400> 58
Phe Glu Pro Phe Xaa Ala Val Ser Leu Gly Ala Arg Ala Thr Ile Asn
1 5 10 15
Cys Lys Ser Ser Gln Arg Val Leu Tyr Xaa Ser Asn Asn Lys Asn Cys
20 25 30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile

35 40 45
Tyr Trp Thr Ser Thr Arg Glu Ser Gly Val Pro Ala Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Ala
65 70 75 80
Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Tyr Tyr Ser Thr Pro Leu
85 90 95
Thr Phe Gly Gly Thr Met Val Glu Ile Lys Arg Thr Val Ala Ala
100 105 110
Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Pro Val Asn Leu Glu
115 120 125
Leu Pro Leu Phe Val Cys Pro Ala Glu Leu Leu Ser Gln Arg Gly Gln
130 135 140
Ser Thr Ser Gly Arg Trp Ile
145 150

<210> 59

<211> 155

<212> PRT

<213> human

<220>

<221> VARIANT

<222> (1)...(155)

<223> Xaa = Any Amino Acid

<400> 59

Xaa Pro Val Arg Ser Xaa Arg Leu Ser Cys Ala Ala Ser Gly Phe Ile
1 5 10 15
Phe Ser Xaa Tyr Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly
20 25 30
Leu Glu Trp Val Ala Ile Ile Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr
35 40 45
Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys
50 55 60
Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala
65 70 75 80
Val Tyr Tyr Cys Ala Arg Asp Gly Gly Pro Arg Trp Phe Leu Ala Ser
85 90 95
Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr
100 105 110
Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Leu
115 120 125
Arg Glu His Ser Gly Pro Gly Leu Pro Gly Ser Arg Thr Thr Phe Pro
130 135 140
Glu Pro Val Thr Val Xaa Val Gly Thr His Asp
145 150 155

a
cont

<210> 60

<211> 152

<212> PRT

<213> human

<220>

<221> VARIANT

<222> (1)...(152)

<223> Xaa = Any Amino Acid

<400> 60

Ser Leu Gln Thr Pro Trp Leu Cys Leu Trp Ala Arg Gly Pro Pro Ser
1 5 10 15
Thr Ala Ser Pro Xaa Arg Val Phe Tyr Thr Ala Pro Thr Ile Lys Asn
20 25 30
Phe Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu
35 40 45
Ile Tyr Trp Ala Ser Ile Arg Glu Ser Gly Val Pro Asp Arg Phe Ser
50 55 60
Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln
65 70 75 80
Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Tyr Tyr Ser Ile Pro
85 90 95
Cys Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala
100 105 110
Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser
115 120 125
Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Lys
130 135 140
Ala Lys Val His Glu Gly Phe Lys
145 150

<210> 61

<211> 177
<212> PRT
<213> human

<220>

<221> VARIANT

<222> (1)...(177)

<223> Xaa = Any Amino Acid

<400> 61

1
a
com
Gly Val Xaa Gln Pro Xaa Arg Ser Leu Arg Leu Ser Cys Ala Ala Ser
1 5 10 15
Gly Phe Xaa Phe Ser Xaa Tyr Gly Met His Trp Val Arg Gln Ala Pro
20 25 30
Gly Lys Gly Leu Glu Trp Val Ala Ile Ile Trp Tyr Asp Gly Ser Ser
35 40 45
Lys Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr Ile Ser Arg Asp
50 55 60
Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu
65 70 75 80
Asp Thr Ala Val Tyr Tyr Cys Ala Arg Asp Gly Gly Pro Arg Trp Phe
85 90 95
Leu Ala Ser Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
100 105 110
Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg
115 120 125
Ser Thr Phe Arg Glu His Ser Gly Pro Gly Leu Pro Gly Gln Gly Leu
130 135 140
Leu Pro Arg Xaa Gly Asp Gly Val Val Glu Leu Arg Arg Ser Asp Gln
145 150 155 160
Xaa Arg Ala Gln Phe Pro Ala Val Leu Lys Val Glu Ile Val Xaa Val
165 170 175
Gln

<210> 62
<211> 153
<212> PRT
<213> human

<220>
<221> VARIANT
<222> (1)...(153)
<223> Xaa = Any Amino Acid

<400> 62

Thr	Gln	Ser	Pro	Asp	Ser	Leu	Ala	Val	Ser	Leu	Gly	Glu	Arg	Ala	Thr
1						5			10					15	
Ile	Asn	Cys	Lys	Ser	Ser	Gln	Ser	Val	Leu	Tyr	Gly	Ser	Lys	Asn	Gln
						20			25				30		
Asn	Tyr	Leu	Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Pro	Pro	Lys	Leu
						35			40			45			
Leu	Ile	Tyr	Trp	Ala	Ser	Thr	Arg	Glu	Ser	Gly	Val	Pro	Asp	Arg	Phe
						50			55			60			
Arg	Gly	Ser	Gly	Ser	Arg	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu
						65			70			75		80	
Gln	Ala	Glu	Asp	Val	Ala	Val	Tyr	Phe	Cys	His	Gln	Tyr	Tyr	Ser	Thr
						85			90			95			
Pro	Trp	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys	Arg	Thr	Val
						100			105			110			
Ala	Ala	Pro	Ser	Val	Phe	Ile	Phe	Pro	Pro	Ser	Asp	Glu	Gln	Leu	Lys
						115			120			125			
Ser	Gly	Thr	Ala	Ser	Val	Val	Cys	Leu	Leu	Asn	Asn	Leu	Tyr	Arg	Lys
						130			135			140			
Pro	Arg	Thr	Arg	Lys	Val	Xaa	Pro	Thr							
						145			150						

<210> 63
<211> 139
<212> PRT
<213> human

a
cont.
<220>
<221> VARIANT
<222> (1)...(139)
<223> Xaa = Any Amino Acid

<400> 63

Arg	Asp	Pro	Pro	Gly	Trp	Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly
1							5			10			15		
Phe	Ile	Phe	Xaa	Asn	Tyr	Xaa	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly
							20			25			30		
Lys	Gly	Leu	Glu	Trp	Val	Ala	Ile	Ile	Trp	Tyr	Asp	Gly	Ser	Ser	Lys
							35			40		45			
Tyr	Tyr	Ala	Asp	Ser	Xaa	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn
							50			55		60			
Ser	Lys	Asn	Thr	Leu	Tyr	Leu	Gln	Met	Asn	Ser	Leu	Arg	Ala	Glu	Asp
							65			70		75		80	
Thr	Ala	Asp	Val	Leu	Leu	Cys	Glu	Arg	Arg	Leu	Gly	His	Gly	Gly	Phe
							85			90			95		

Ser Leu Leu Thr Thr Gly Ala Gln Gly Asn Xaa Xaa Xaa Pro Xaa Ser
100 105 110
Ser Xaa Leu Tyr Xaa Arg Ala Xaa Ile Xaa Ser Phe Pro Pro Gly Xaa
115 120 125
Pro Ala Xaa Xaa Xaa Thr Leu Arg Xaa Xaa Xaa
130 135

<210> 64
<211> 151
<212> PRT
<213> human

<220>
<221> VARIANT
<222> (1)...(151)
<223> Xaa = Any Amino Acid

<400> 64
Phe Val Ala Val Ser Leu Gly Glu Arg Xaa Thr Ile Asn Cys Lys Ser
1 5 10 15
Ser Gln Ser Ile Leu Tyr Ser Ser Asn Asn Gln Asn Phe Leu Ala Trp
20 25 30
Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Trp Ala
35 40 45
Ser Ile Arg Glu Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser
50 55 60
Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val
65 70 75 80
Ala Val Tyr Tyr Cys Gln Gln Tyr Ser Ile Pro Cys Thr Phe Gly
85 90 95
Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr Val Ala Ala Pro Ser Val
100 105 110
Phe Ile Phe Pro Pro Ser Asp Glu Pro Xaa Leu Lys Ile Trp Asn Cys
115 120 125
Leu Cys Cys Val Pro Cys Leu Asn Asn Phe Tyr Pro Arg Xaa Gly Gln
130 135 140
Ser Pro Val Glu Gly Gly Tyr
145 150

A
Cont.
<210> 65
<211> 116
<212> PRT
<213> human

<220>
<221> VARIANT
<222> (1)...(116)
<223> Xaa = Any Amino Acid

<400> 65
Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Tyr Xaa Trp Xaa
1 5 10 15
Trp Ile Arg Gln Pro Xaa Gly Lys Gly Leu Glu Trp Ile Gly Cys Phe
20 25 30
Tyr Tyr Xaa Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys Ser His Val
35 40 45
Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Tyr Xaa Lys Leu Ser

50	55	60	
Xaa Val Thr Xaa Ala Asp Thr Xaa Xaa Asn Asn Xaa Ala Arg Asp Arg			
65	70	75	80
Gly Xaa Val Xaa Trp Xaa Xaa Thr Xaa Thr Thr Glu Ala Xaa Glu Pro			
85	90	95	
Trp Xaa Thr Val Ile Xaa Lys Xaa Xaa Gln Xaa Xaa Pro Xaa Xaa			
100	105	110	
Xaa Xaa Xaa Xaa			
115			

<210> 66
 <211> 159.
 <212> PRT
 <213> human

<220>
 <221> VARIANT
 <222> (1)...(159)
 <223> Xaa = Any Amino Acid

<400> 66

Ser Leu Val Ala Xaa Leu Gly Glu Arg Pro Thr Ile Asn Cys Lys Ser			
1	5	10	15
Ser Gln Ser Val Leu Tyr Xaa Ser Lys Asn Gln Asn Tyr Leu Ala Trp			
20	25	30	
Tyr Gln Gln Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Trp Ala			
35	40	45	
Ser Thr Arg Glu Ser Gly Val Pro Asp Arg Phe Arg Gly Ser Gly Ser			
50	55	60	
Arg Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val			
65	70	75	80
Ala Leu Ala Val Tyr Phe Cys His Gln Tyr Tyr Ser Thr Pro Trp Thr			
85	90	95	
Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr Val Ala Ala Pro			
100	105	110	
Ser Val Phe Ile Phe Pro Pro Ser Asp Glu His Leu Glu Ile Leu Glu			
115	120	125	
Leu Pro Leu Xaa Xaa Ala Cys Thr Asn Ser Ile Pro Arg Xaa Gly Pro			
130	135	140	
Lys Val Ser Xaa Xaa Xaa Gly Xaa Ile Thr Pro Xaa Xaa Xaa Xaa			
145	150	155	

a
 Cont'
 <210> 67
 <211> 157
 <212> PRT
 <213> human

<220>
 <221> VARIANT
 <222> (1)...(157)
 <223> Xaa = Any Amino Acid

<400> 67

Lys Pro Phe Gln Thr Xaa Pro Phe Thr Cys Thr Val Ser Gly Gly Ser			
1	5	10	15
Ile Ser Ser Gly Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro Gly			
20	25	30	

Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Asn Ser Gly Ser Thr Tyr
 35 40 45
 Tyr Asn Pro Ser Leu Gln Ser Arg Val Thr Ile Ser Val Asp Thr Ser
 50 55 60
 Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr
 65 70 75 80
 Ala Val Tyr Tyr Cys Ala Gly Gln Lys Trp Ser Tyr Tyr Tyr Tyr
 85 90 95
 Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Xaa Ala
 100 105 110
 Ser Thr Xaa Gly Pro Ser Val Phe Pro Leu Ala Pro Xaa Ser Arg Ser
 115 120 125
 Thr Ser Xaa Ser Thr Asp Gly Xaa Trp Ala Cys Leu Xaa Gln Trp Thr
 130 135 140
 Thr Phe Pro Glu Pro Val Xaa Cys Xaa Xaa Trp Xaa Leu
 145 150 155

<210> 68

<211> 152

<212> PRT

<213> human

<220>

<221> VARIANT

<222> (1)...(152)

<223> Xaa = Any Amino Acid

<400> 68

Lys Pro Xaa Glu Thr Xaa Pro Leu Thr Cys Thr Val Ser Gly Gly Ser
 1 5 10 15
 Ile Ser Asn Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly
 20 25 30
 Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Asn Tyr Asn
 35 40 45
 Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn
 50 55 60
 Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
 65 70 75 80
 Tyr Tyr Cys Ala Arg Gly Pro Gly Gly Ser Tyr Tyr Tyr Gly Met
 85 90 95
 Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr
 100 105 110
 Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser
 115 120 125
 Glu Ser Thr Ala Ala Leu Gly Cys Leu Gly Gln Gly Leu Leu Pro Arg
 130 135 140
 Thr Gly Asp Gly Val Arg Xaa Asn
 145 150

<210> 69

<211> 131

<212> PRT

<213> human

<400> 69

Leu Ser Ala Ser Val Gly Asp Arg Val Ile Ile Thr Cys Arg Ala Ser
 1 5 10 15

Gln Asn Ile Thr Asp His Leu Asn Trp Tyr Gln Gln Ile Ala Gly Lys
20 25 30
Ala Pro Arg Pro Leu Ile Tyr Thr Ala Ser Ser Leu Gln Gly Gly Val
35 40 45
Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
50 55 60
Ile Ser Ser Leu Gln Pro Glu Asp Phe Ser Thr Tyr Tyr Cys Gln Gln
65 70 75 80
Ser Tyr Ser Thr Pro Cys Ser Phe Gly Gln Gly Thr Lys Leu Glu Ile
85 90 95
Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
100 105 110
Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
115 120 125
Phe Tyr Pro
130

<210> 70

<211> 103

<212> PRT

<213> human

<220>

<221> VARIANT

<222> (1)...(103)

<223> Xaa = Any Amino Acid

<400> 70

Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Ser Gly Tyr Tyr
1 5 10 15
Met His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met Gly
20 25 30
Ser Ile His Pro Asn Ser Gly Gly Xaa Asn Phe Ala Gln Lys Phe Gln
35 40 45
Gly Arg Val Thr Met Thr Arg Asp Thr Ser Ile Asn Thr Ala Tyr Leu
50 55 60
Glu Leu Ser Arg Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala
65 70 75 80
Arg Asp Lys Asn Tyr Gly Asp Tyr Val Phe Asp Tyr Trp Gly Gln Gly
85 90 95
Thr Leu Val Thr Val Ser Ser
100

A
Cont

<210> 71

<211> 5

<212> DNA

<213> human

<400> 71

tatac

5

<210> 72

<211> 5

<212> DNA

<213> human

<400> 72

gtata

5

<210> 73

<211> 21

<212> PRT

<213> human

<400> 73

Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Pro Leu Ala Pro Cys Ser
1 5 10 15

Arg Ser Thr Ser Thr
20

<210> 74

<211> 17

<212> PRT

<213> human

<400> 74

Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu
1 5 10 15

Gln

<210> 75

<211> 120

<212> PRT

<213> human

<400> 75

Val Ser Gly Gly Ser Ile Ser Ser Gly Cys Tyr Tyr Trp Ser Trp Ile
1 5 10 15

Arg Gln His Pro Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Asn
20 25 30

Ser Gly Ser Thr Tyr Tyr Asn Pro Ser Leu Gln Ser Arg Val Thr Ile
35 40 45

Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val
50 55 60

Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Gly Lys Trp Ser Tyr
65 70 75 80

Tyr Tyr Tyr Gly Met Asp Val Trp Gly Gln Gly Thr Thr Val Thr
85 90 95

Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro Pro Leu Ala
100 105 110

Pro Cys Ser Arg Ser Thr Ser Thr
115 120